

## Symmetra PX UPS

10-40 kW  
208 V

### Site Preparation Guide

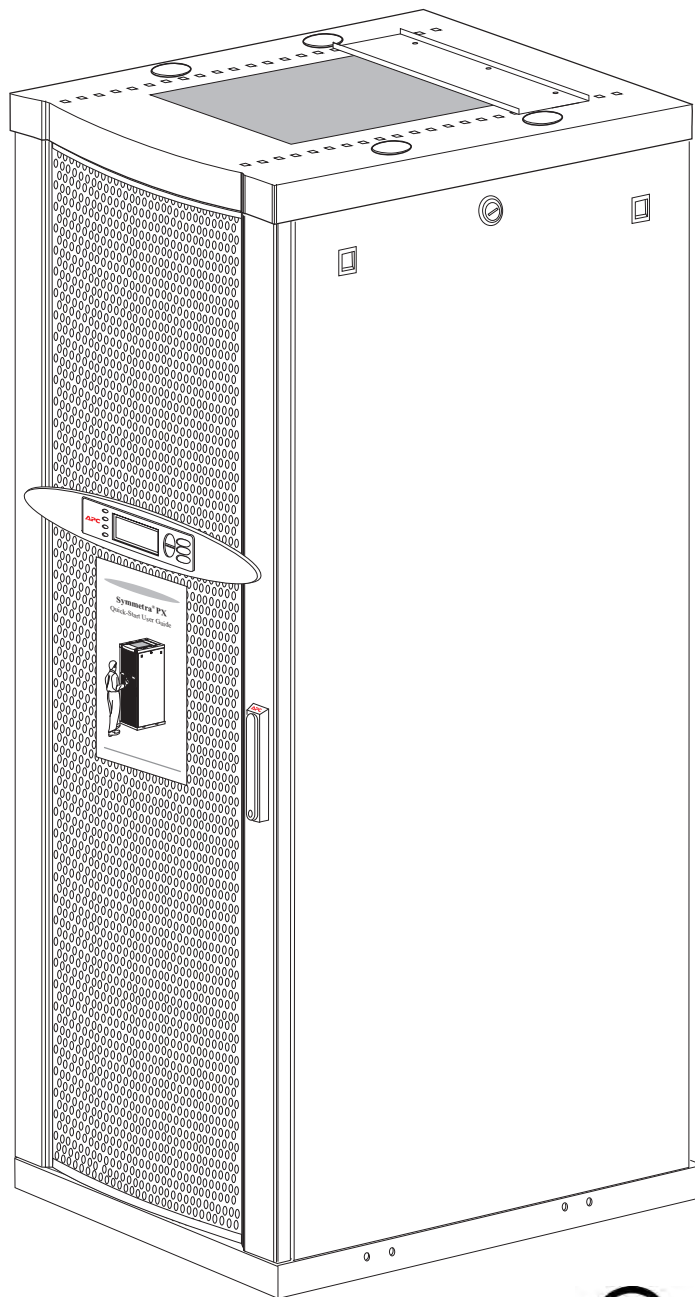




# Symmetra® PX

## 10-40 kW 208V

### Site Preparation Guide





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# IMPORTANT SAFETY INSTRUCTIONS

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## SAVE THESE INSTRUCTIONS

This guide contains important information that should be followed when handling the UPS.

## Symbols used in this guide



### CAUTION!

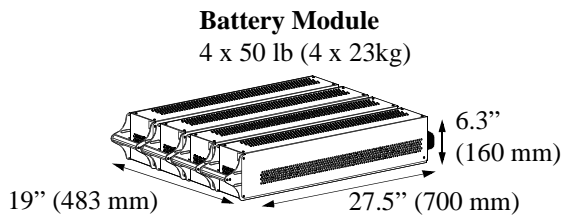
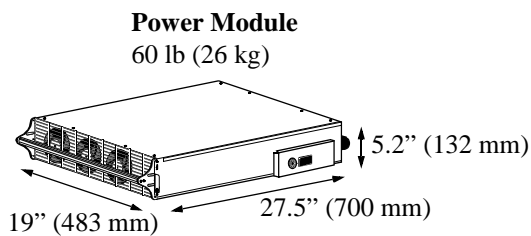
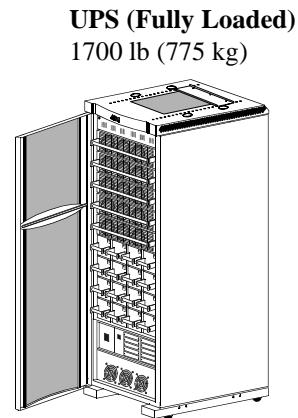
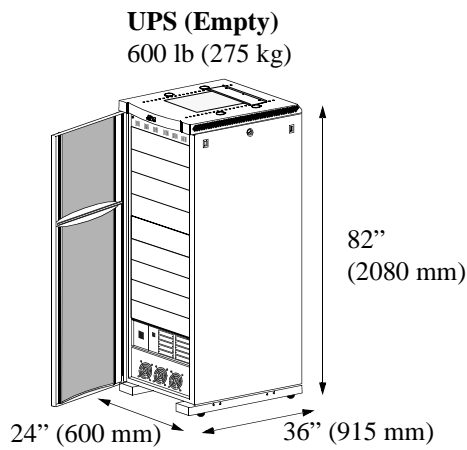
Read this information



**See also**

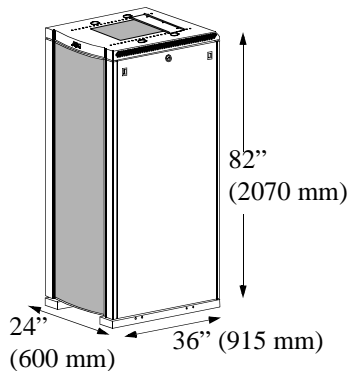
Indicates that more information is available on the same subject in a different manual.

# Overview of System Components

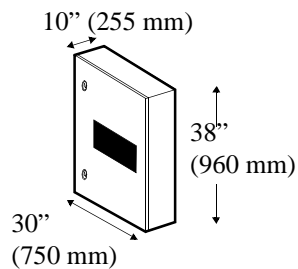


## Optional equipment

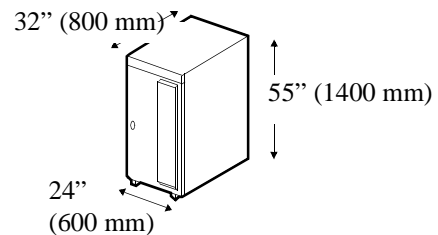
**XR Battery Enclosure**  
Empty: 550 lb (250 kg)  
Full: 2150 lb (990 kg)



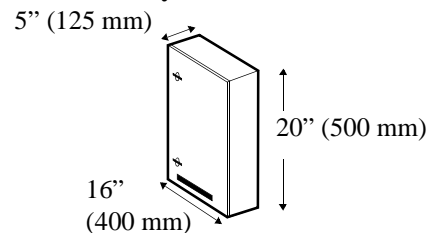
### Maintenance Bypass Panel



### Isolation Transformer








### Battery Breaker Box





# Operating Environment

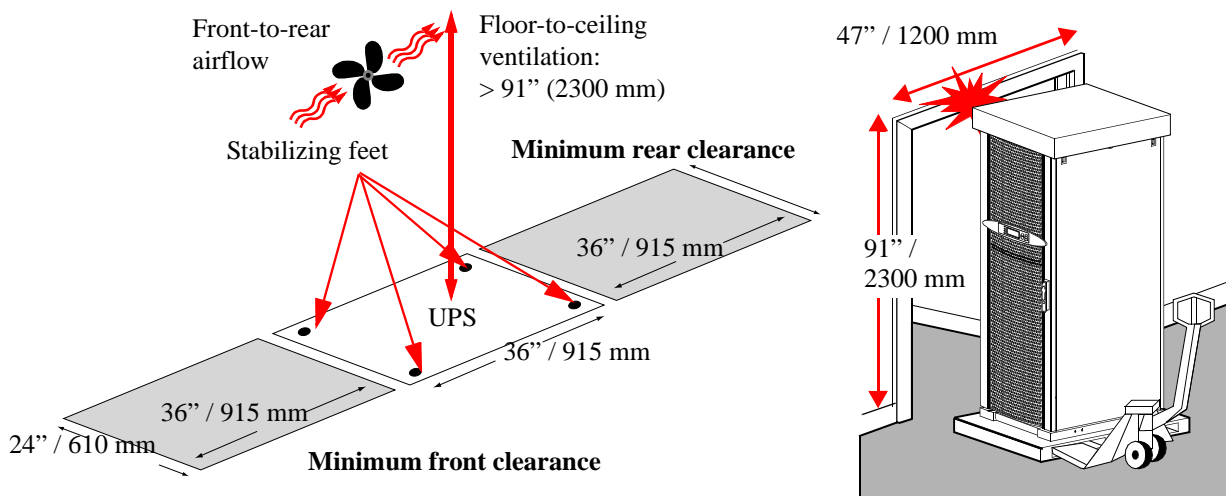
Install the UPS in an indoor, controlled environment				
				
Temperature range: 32°-104°F	Keep ventilated front-to-rear airflow	Relative humidity: <95% non-condensing	No conductive dust or corrosive fumes	Elevation: 0-10,000 ft.
Full load loss at nominal mains: 12,682 BTU/hr (3,716 Watts)				

## Space considerations



### CAUTION!

If the UPS exceeds doorway height, remove from pallet and wheel through door (see Overview of System Components section for UPS height excluding pallet).



### CAUTION!

The UPS and the XR Battery Enclosure are heavy. Ensure that the floor and sub-floor can support the total weight of the configuration when concentrated on the stabilizing feet.

# System Electrical Information



## CAUTION!

All electrical power and power control wiring must be installed by a qualified electrician, and must comply with local and national regulations for maximum power rating.

### Input

Input voltage	3-Phase 208 V (166V-240V)
Input current (nominal, per phase)	123 A
Maximum input current (continuous, at minimum mains voltage)	162 A
Input current protection (external to UPS, not supplied)	175 A *note 4
Input frequency	50/60 Hz

### Output

Output voltage (on line)	3-Phase 208 V
Output current (nominal, per phase)	111 A
Maximum output current (in bypass only at 125% overload, per phase)	139 A
Neutral output current (with 100% switch mode load)	192 A *note 7
Output current protection (external to UPS, not supplied)	150 A *note 5
Output frequency (on line, in bypass)	Synchronized to Input
Output frequency (on battery)	50/60 Hz

### Overcurrent device and disconnect switch for external safety

DC bus voltage	+/- 192 V
DC voltage rating of the battery supply	250 V
Maximum available battery supply fault current	10 KA

### Recommended source connection.

1. Input electricity to be provided from a dedicated, grounded 4-wire WYE utility power source with a grounded neutral.
2. If a grounded 3-wire utility is present, a Delta-to-WYE isolation transformer on UPS input is required.
3. Ensure clockwise voltage phase rotation (L<sub>1</sub>,L<sub>2</sub>,L<sub>3</sub>)

### Recommended current protection.

4. Input: 175 Amp. 3-Pole AC circuit breaker with 30 kAIC.

Note: If your installation does not include an Isolation Transformer and a Maintenance Bypass

Panel (optional equipment), use a 175 Amp Class “J” current limiting fuse on each input phase.

5. Output: 150 Amp 3-pole AC circuit breaker with 30 kAIC.

**Recommended wiring for a 104°F (40°C) temperature environment.**

6. Input wires: 2/0 AWG 90°C (194°F) rated copper wire.

Output wires: 1/0 AWG 90°C (194°F) rated copper wire.

Refer to NEC Articles 310-15, 310-16 and 315 for further information.

7. Neutral output wires: rate for 173% of output phase current if feeding all Switch Mode Power Supply loads without power factor correction.

8. Ground wires: sized in accordance with NEC Article 250-122 and Table 250-122.

9. Maximum cable sizes: 250 kc mil.

10. Recommended cable lugs and crimping tools. Manufacturer: Framatome Connectors International (FCI) (see table).

Cable Size (AWG)	Terminal bolt diameter: 8 mm		
	Cable Lug Type	Crimping Tool	Die
8	YA8CL2TC38	MD7-34R	W8CVT
6	YA6CL2TC38	MD7-34R	W5CVT
4	YA4CL2TC38	MD7-34R	W4CVT
3	YA3CL2TC38	Y35	U3CRT
2	YA2CL2TC38	MD7-34R	W2CVT
1	YA1CL2TC38	MD7-34R	W1CVT
1/0	YA25CL2TC38	MD7-34R	W25VT
2/0	YA26CL2TC38	MD7-34R	W26VT
3/0	YA27CL2TC38	MD7-34R	W27VT
4/0	YA28CL2TC38	MD7-34R	W28VT

**EPO Switch wiring (required)**

The UPS is to be connected to either a dry contact or 24Vdc Emergency Power Off (EPO) Switch. The EPO circuit is considered Class 2 and SELV (Safety Extra Low Voltage). A SELV circuit is isolated from primary circuitry through an isolating transformer and designed so that, under normal conditions, the voltage is limited to 42.4 Vac peak or 60 Vdc. SELV and Class 2 circuits must be isolated from all primary circuitry. Do not connect any circuit to the EPO terminal block unless it can be confirmed that the circuit is SELV or Class 2.

Use one of the following cables to connect the UPS to the EPO Switch.

**For installations in the US.**

- CL2Class2 cable for general purpose use.
- CL2PPlenum cable for use in a vertical run in a shaft or from floor to floor.
- CL2RRacer cable for use in dwellings and for use in raceway
- CL2XLimited use cable for use in dwelling and for use in raceway.

**For installations in Canada.**

- CL2RCertified, type ELC(Extra-Low-Voltage Control Cable).
- CL2XCertified, type ELC(Extra-Low-Voltage Control Cable).

**Extended Run Battery Enclosure (Optional)**


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Battery voltage (nominal)	+/- 192 V
Battery current (at full load)	115 A at +/- 192 V
Max. current (at end of discharge)	137 A at +/- 160 V

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**If extended run battery enclosures are customer-supplied, please refer to product-specific data.**

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**Maintenance Bypass Panel (Optional)**


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Input voltage AC	3-Phase 208 V
Output voltage AC	3-Phase 208 V
Full load output rating	40 kW
Max. continuous input current (at minimum mains)	155 A
Max. continuous output current + 125% overload (bypass mode only)	139 A
Nominal output current	111 A
Nominal input current	125 A
External input fuses	175 A
External output fuses	150 A

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**Isolation Transformer (Optional)**


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Nominal input voltage AC	3-Phase 208 V *
Output voltage AC	3-Phase 208 V **
Full load output rating	44 kW
Max. continuous input current (at minimum mains)	172 A
Nominal output current	162 A

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**\* Can be configured WYE or Delta \*\* WYE only**

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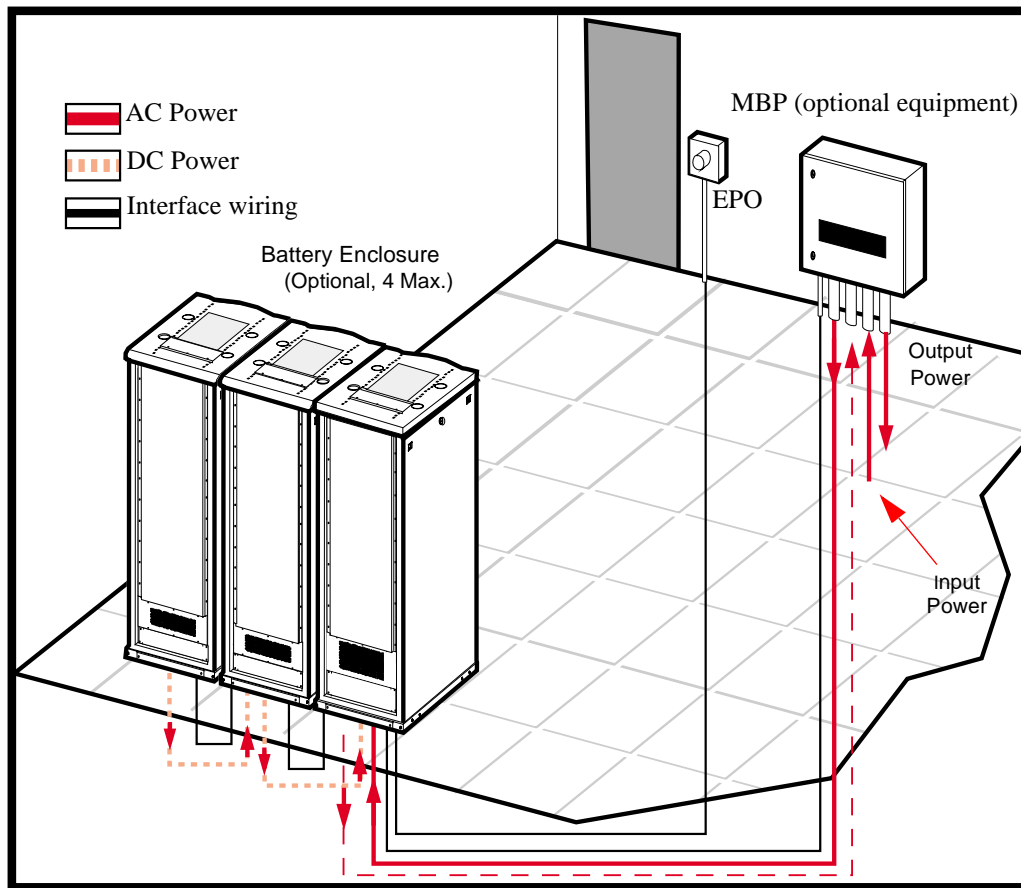
**Battery Breaker Box (used for customer-supplied extra batteries only)**


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Breaker rating	250 A
Full load DC current	115 A at end of discharge +/- 192 V
Max. DC current	137 A at end of discharge +/- 160 V

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# Basic Wiring Overview



# Site Preparation Checklist

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## System components. Have you -

- ☐ verified that UPS output power meets current and future load (kW) requirements?
- ☐ added N+1 redundancy with an additional Power Module (Part # SYPM10KF)? The UPS houses up to 5 power modules (up to 40 kW, N+1).
- ☐ determined minimum battery run time requirement based on load (kW) and selected proper number of Battery Modules (SYBT4) and Extended Run Battery Enclosures (SYCFXR8)? Each Extended Run Battery Enclosure houses up to 8 Battery Modules (32 battery units).
- ☐ considered management card accessories to meet monitoring requirements?
- ☐ considered a service program or the extended warranty plan?

## Site preparation. Have you -

- ☐ verified that input voltage and current are available (see System Electrical Information Section)?
- ☐ considered correct operating space, floor strength (see Overview of System Components section) and environment (see Operating Environment Section)?
- ☐ reviewed all electrical requirements to determine wiring requirements?

## Arrival preparation. Have you -

- ☐ verified that space and handling equipment are ready to receive the UPS (including the unloading of the UPS from the delivery truck)?
- ☐ scheduled an electrician to install the UPS?

If a problem occurs, call customer support.



**See also**

For wiring of the UPS, refer electrician to Electrical Installation Guide.





## APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to find answers to frequently asked questions (FAQs), to access documents in the APC Knowledge Base, and to submit customer support requests.
  - **www.apc.com** (Corporate Headquarters)  
Connect to localized APC Web sites for specific countries, each of which provides customer support information.
  - **www.apc.com/support/**  
Global support with FAQs, knowledge base, and e-support.
- Contact an APC Customer Support center by telephone or e-mail.
  - Regional centers:

APC headquarters U.S., Canada	(1) (800) 800-4272 (toll free)
Latin America	(1) (401) 789-5735 (USA)
Europe, Middle East, Africa	(353) (91) 702020 (Ireland)
Japan	(0) 3 5434-2021

- Local, country-specific centers: go to [www.apc.com/support/contact](http://www.apc.com/support/contact) for contact information.

Contact the APC representative or other distributor from whom you purchased your APC product for information on how to obtain local customer support.

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